

## Betrayal Trauma: Traumatic Amnesia as an Adaptive Response to Childhood Abuse

Jennifer J. Freyd  
*University of Oregon*

Betrayal trauma theory suggests that psychogenic amnesia is an adaptive response to childhood abuse. When a parent or other powerful figure violates a fundamental ethic of human relationships, victims may need to remain unaware of the trauma not to reduce suffering but rather to promote survival. Amnesia enables the child to maintain an attachment with a figure vital to survival, development, and thriving. Analysis of evolutionary pressures, mental modules, social cognitions, and developmental needs suggests that the degree to which the most fundamental human ethics are violated can influence the nature, form, and processes of trauma and responses to trauma.

**Key words:** amnesia, child abuse, memory repression, sexual abuse, trauma theory

*Frank Fitzpatrick, a 38-year-old insurance adjuster in Cranston, R.I., began remembering having been sexually molested by a parish priest at age 12.*

*Mr. Fitzpatrick's retrieval of the repressed memories began, he said, when "I was feeling a great mental pain, even though my marriage and everything else in my life was going well." Puzzled, Mr. Fitzpatrick lay down on his bed, "trying to let myself feel what was going on."*

*Mr. Fitzpatrick . . . slowly realized that the mental pain was due to a "betrayal of some kind," and remembered the sound of heavy breathing. "Then I realized I had been sexually abused by someone I loved," said Mr. Fitzpatrick. But it was not until two weeks later that he suddenly remembered the priest, the Rev. James R. Porter. . . .*

*In Mr. Fitzpatrick's case the accusations have apparently been corroborated*

*by about 50 other men and women, and Mr. Porter, who is no longer a priest, has acknowledged abusing an unspecified number of children.*

*Most of the victims never forgot the molestation, said Mr. Fitzpatrick, but remained silent all those years out of shame and fear. Two other victims had also repressed the memories. One man started having flashbacks of sexual abuse from Father Porter the moment he heard the news of the accusations on a radio broadcast. The other found himself crying at work soon after hearing the news, and then began to have a flood of his own memories.*

(Goleman, *New York Times*, 1992, p. B5)

Why do children and adults sometimes fail to remember significant traumatic events? How is it possible that people can fail to remember repeated instances of abuse? The nature and even existence of this phenomenon have sparked controversy in the courtroom (e.g., see Terr, 1994, on *People v. Franklin*) and prompted the formation of international organizations promoting opposing points of view about the controversy (e.g., Boodman, 1994; Grant, 1994).

I propose a theory of trauma that focuses on violation of the basic ethic or metaethic of human relationships. The degree to which a trauma involves a sense of having been fundamentally cheated or betrayed by another person may significantly influence the individual's cognitive encoding of the experience of trauma, the degree to which the event is easily accessible to awareness, and the psychological as well as behavioral responses.

Under many conditions, it is to our survival advantage to be highly attuned to betrayals. To the extent that we are able to choose with whom to engage in further social agreements, we want to avoid those who have previously betrayed us. Cosmides (1989) postulated that humans have a naturally evolved mental mechanism devoted to detecting cheaters. She has compelling experimental data showing the apparent specificity of social contracts in activating our abilities to reason about possible forms of rule violations. In other words, people are extremely good at detecting cheating relative to detecting structurally similar, but nonsocial, rule violations (Cosmides, 1989). However, in the case of certain kinds of abusive betrayals of children where escape is not a viable option, the cheater-detecting mechanisms may need to be stifled for the greater goal of survival.

Betrayal trauma theory does not directly address the issue of memory veracity. Instead, it asks the foundational question: If a child is abused and betrayed, what would we expect to happen to the information about that abuse and betrayal? Betrayal trauma theory posits that from a logical analysis of evolutionary pressures and cognitive architecture, we can expect that there will be information blockage under certain conditions (of which sexual abuse is likely to be an example) and that this information blockage will create various

types of traumatic amnesia that can be understood in terms of cognitive mechanisms (Freyd, in preparation). The theory endorses neither the model of memory repression as dependent on an active and purposeful process, nor the model of memory recovery as similar to the playback of a video recording—concepts that have been challenged as part of a larger effort to question the credibility of adults claiming to have remembered childhood abuse (e.g., Salter, 1993).

Betrayal trauma is offered as a theory of psychogenic amnesia for childhood abuse, to be considered along with the growing literature on trauma, child abuse, and psychogenic amnesia. In the short run, the theory may help to make more understandable some of the puzzling phenomena of forgetting and later remembering abuse. In the long run, however, the theory must be subjected to empirical testing. In this article I attempt to make the preliminary theory accessible to both practitioners and researchers, with the hope that these concepts will increase understanding of amnesia for child abuse.

#### WHY AMNESIA FOR CHILDHOOD ABUSE?

Psychogenic amnesia has been reported for a variety of traumatic experiences (Terr, 1994; van der Kolk, 1987), including veterans' combat experiences (Archibald & Tuddenham, 1965; Brende, 1987; Henderson & Moore, 1944; McFall, Murburg, Smith, & Jensen, 1991). Although traumatic amnesia in general raises many questions, amnesia for childhood sexual abuse has proved to be a particularly vexing issue, both historically and currently (see Herman, 1992; Summit, 1988; van der Hart & Friedman, 1989). Debates rage over the prevalence of childhood sexual abuse itself, with the most widely accepted figures currently coming from Russell's (1986) community sample ( $N = 930$ ): Before reaching 18 years of age, 16% of females were sexually abused by a family member, 31% by a nonfamily member, and 38% by either family or nonfamily members or both (also see Peters, Wyatt, & Finkelhor, 1986). Although minimizing the negative consequences of sexual abuse, Kinsey (1953) indicated that one in four women reported childhood sexual abuse. Even the lower estimates of the prevalence of sexual abuse from recent studies indicate that the problem is widespread, and studies consistently indicate that child sexual abuse often results in negative sequelae (e.g., Finkelhor, 1986). Not surprising, childhood sexual abuse histories are typically found to be especially common in clinical populations (Bryer, Nelson, Miller, & Krol, 1987; Chu & Dill, 1990; Goodwin, Attias, McCarty, Chandler, & Romanik, 1988).

Of particular relevance are the many findings relating incest and childhood sexual abuse to psychogenic amnesia and other dissociative symptoms

(e.g., Braun, 1990; Herman & Schatzow, 1987; Putnam, 1989; Putnam, Gur-off, Silberman, Barban, & Post, 1986; Strick & Wilcoxon, 1991; Terr, 1987, 1990; van der Kolk & van der Hart, 1989). Williams (1992) reports that 38% of women with documented childhood sexual assaults (documented due to hospital emergency room admissions) were either amnesic for the abuse or were unwilling to report it despite an interview procedure designed to elicit comfort with such disclosures (also see Femina, Yeager, & Lewis, 1990). Briere (1992) summarizes results from a large study in which more than 59% of adults reporting sexual abuse also reported amnesia for the abuse at some previous point in their histories. More recently, Feldman-Summers and Pope (1994) report that approximately 24% of a national sample of psychologists indicated experiencing sexual and/or physical abuse in childhood; of those abuse survivors, approximately 40% reported a period of forgetting some or all of the abuse. Loftus, Polonsky, and Fullilove (1994) report that 54% of women in an outpatient substance abuse treatment group reported a history of childhood sexual abuse; of these, 19% reported that they had forgotten the abuse for a period of time and that later the memory had returned. Thus, depending on the form of the question and the population studied, the rates of reported amnesia (19%, 38%, 40%, and 59%) appear to vary from moderate to high.

In the remainder of this section I consider the functional utility of amnesia for childhood abuse by considering the evolutionary significance of detecting betrayal, the purpose of experiencing or blocking painful information, and the role of attachment in human survival.

### Evolutionary Psychology of Detecting Betrayals

Cosmides (1989) postulated that humans have a naturally evolved mental mechanism devoted to detecting cheaters. She has striking results from experiments using the Wason Selection Task, showing the apparent specificity of social contracts in activating our abilities to reason about possible forms of rule violations. Cosmides found that people are extremely good at detecting cheaters, whether the cheaters make errors of omission or commission. In contrast, most people fail the Wason Selection Task (which requires searching for disconfirming evidence) when the context of the problem does not involve social contracts (Cosmides, 1989).

To be highly attuned to betrayals is adaptive. When we are able to choose with whom to engage in further social agreements, we want to avoid those who have previously betrayed us. The computation of "I've been cheated" or even "perhaps I've been cheated" can produce a powerful negative arousal, suggesting that the "cheater detector" mental mechanism is highly connected with

affective response. This negative arousal presumably motivates future avoidance of cheaters.

### Function of Pain and Blocking Pain

Dissociation during trauma and traumatic amnesia or repression are commonly understood to be psychological defenses against psychological pain, as if removing pain is a logical end goal. Yet in an evolutionary or functional sense, it would not be adaptive to have an animal spontaneously experience pain, either physical or psychological, and then go to great lengths to get rid of the pain merely to be rid of it. Instead, it is more parsimonious to assume that pain exists to motivate behavioral changes. Natural systems for blocking pain would be adaptive only if the behavioral consequences of pain in a particular situation were themselves maladaptive. (On the adaptiveness of stress-induced analgesia, see Kelly, 1986; Levinthal, 1988.) In other words, an animal is surely motivated to avoid and alleviate pain, but behind that motivation is an evolutionary goal more related to survival.

Consider this hypothetical example: Jody breaks a leg on a skiing accident while traveling with a companion. Jody is likely to experience tremendous pain. The pain will be so severe that it is unlikely that she will want to move at all, and certainly unlikely that she will stand up and walk. Instead she will wait while her companion goes to get a rescue team. On the other hand, if Cynthia has a similar accident while traveling alone, there is a good chance that shortly after the accident she will spontaneously block perception of the leg pain and get up and hobble to the safety of other humans. In the first case, the pain is protecting Jody from sustaining further damage that is caused by walking on a broken leg. In the second case, the blockage of pain is allowing Cynthia to escape the life-threatening situation of being trapped alone in the snow. Presumably Jody abhors pain as much as Cynthia, but only Cynthia's circumstance is likely to create the spontaneous blockage of pain.

The skiing accident can serve as a metaphor for the dissociation of psychic pain from conscious awareness. Jody's pain carries information: In essence it says, "Do not walk on my leg; it will damage it further." Cynthia's blockage of pain suppresses that information; her nervous system automatically risks damage to her leg in order to ensure her immediate survival. Survival may similarly depend on blocking purely mental information and the corresponding psychic pain. According to this perspective, memory repression, dissociation, and related defenses are not functions we have to reduce psychic pain *per se*. Instead, those phenomena function to control social cognitions and thus to control social behaviors. At times, psychic pain may be used as a metric by the mind in order to invoke defenses, but the functional utility of defenses is not for the end result of merely avoiding pain; there must be, at least in an

evolutionary sense, a survival advantage in invoking the numbing of pain and simultaneously blocking information. Indeed, in the long run it is arguable that psychological defenses do not reduce psychic pain at all, just as Cynthia's long-term prognosis for experiencing leg pain is less favorable than is Jody's long-term prognosis.

### Attachment, Betrayal, and Trauma

I propose that the sort of psychological trauma capable of inducing profound amnesia is fundamentally social in nature. It is widely recognized that the physical and mental survival of human infants and children depends on a successful attachment between the child and caregiver (Bowlby, 1969, 1988). Because this attachment is of overwhelming significance to the developing child, a complex system of emotional, cognitive, and behavioral components ensures that attachment is operative during development.

Some traumas may cause immediate terror and may lead to sequelae typical of post-traumatic stress disorder, such as increased arousal, generalized numbing, and intrusive cognitions (Horowitz, 1986; Krystal, 1990; McNally, 1992). It is the thesis of this article, however, that profound amnesia is a likely sequel particularly in cases of betrayal: a betrayal of trust that produces conflict between external reality and a necessary system of social dependence. Of course, a particular event may be simultaneously a betrayal trauma and terrifying. Rape can be such an event; the victim's life may be immediately threatened while she is being psychologically betrayed (Spiegel, 1989). Perhaps many childhood traumas are such events, in that children may expect to be socially protected from physical threats (see also Barach, 1991, on neglect as a kind of passive abuse).

Child abuse is especially likely to produce a social conflict or betrayal for the victim (Bunge, 1993; Dominelli, 1989; Finkelhor & Browne, 1985; Miller, 1984). Further, there is evidence that the most devastating psychological effects of child abuse occur when the victims are abused by a trusted person who was known to them (e.g., Feinauer, 1989). If a child processed the betrayal in the normal way, he or she would be motivated to stop interacting with the betrayer. Instead, he or she essentially needs to ignore the betrayal. If the betrayer is a primary caregiver, it is especially essential that the child does not stop behaving in such a way that will inspire attachment. For the child to withdraw from a caregiver on which he or she is dependent would further threaten the child's life, both physically and mentally. Thus the trauma of child abuse by its very nature requires that information about the abuse be blocked from mental mechanisms that control attachment and attachment behavior. The information that gets blocked may be partial (for instance, blocking emotional responses only), but in many cases partial blocking will lead to a more profound amnesia.

## COGNITIVE ARCHITECTURE

How could a child experience repeated instances of abuse, fail to remember the events, and yet eventually be able to recover those memories? For this to happen there must be a disruption of the sort of processing that leads to consciously accessible memory but the continuation of other sorts of processing that lead to some kinds of memory for the events. In this section I will review some concepts and findings from cognitive psychology that can be used to help understand these dissociations in processing and memory.

### Mental Modules Processing Information in Parallel

According to the prevailing viewpoint in cognitive science, there are in place many separate mental modules, or cognitive mechanisms, capable of processing incoming information in parallel. Although there is probably some connectivity between different modules, the connectivity between modules is presumably much less than within modules (e.g., Fodor, 1983; Hinton & Anderson, 1981; Rumelhart, McClelland, & the PDP Group, 1986). Often, different modules process the same event in different ways. For instance, if you are hungry and come upon some food perched on a precipice, information-processing modules that compute strategies for acquiring food may produce strong signals to move toward the food. At the same time, information-processing modules that compute strategies for locomoting and moving in a secure manner may produce strong signals to avoid the precipice. This situation has the potential for an approach-avoidance dilemma. Such dilemmas happen all the time, but fortunately they are often settled without extensive conscious intervention.

### Divided Control Structures and Automatic Processing

A given memory is often dependent on a specific set of mental modules as opposed to being more general or all-purpose (Squire, 1992). For instance, memory for riding a bicycle is closely tied to modules controlling motor behavior. Different mental modules can simultaneously control behavior, as when we drive a car and engage in a conversation. This fact about human behavior can be understood in terms of Hilgard's (1986) notion of divided control, or neo-dissociationism. This sort of dissociation is in no way pathological. Indeed, automatic processing, such as driving a car while talking, essentially requires divided control structures. Of course, the multiplicity of mental modules, automatic processing, and divided control structures occur for social information processing too. This can lead to events such as a person's saying in an obviously angry voice, "I'm not angry," and sincerely

meaning both the verbal protestation and the nonverbal message of anger. Because different processes can control different aspects of behavior, the computation of no anger can produce the words, and the computation of anger can produce the intonation and body language.

### Selective Attention

The ability to selectively attend to incoming information in an appropriate way, and especially the ability to selectively admit information into consciousness is necessary for proper functioning. For instance, children with attention deficit disorder have difficulties functioning because they are distracted by too much stimulation. Even when information is not entering consciousness, its meaning can still be processed (Treisman, 1960). For instance, if you are attending to one speech stream and ignoring another, say at a cocktail party, you will suddenly become aware of the unattended speech stream under various conditions, such as when your name is used or when the conversation turns to something that has special significance for you.

### Varieties of Memory

Cognitive scientists distinguish different kinds of memory and knowledge. One distinction is between declarative knowledge and procedural knowledge (see Squire, 1992). Roughly, *declarative knowledge* is knowing *what* (the verbalizable facts one knows), and *procedural knowledge* is knowing *how* (such as the motor procedures that guide learned behavior). These types of knowledge are often dissociated, as in knowing how to ride a bicycle but having little declarative knowledge about that skill. Further, neuropsychological evidence suggests anatomical dissociations for these sorts of knowing (Squire, 1992). A related distinction is between *explicit* and *implicit* memory (see Schacter, 1992; Squire, 1992). Erdelyi (1990) has pointed out that it seems repression works on declarative knowledge but does not work very well for certain kinds of procedural, kinesthetic, or sensory information. Recent research suggests that conscious recall (explicit memory) and unconscious influences (implicit memory) are indeed dissociated at the cognitive level (see Jacoby & Kelley, 1992).

### Types of Explicit Memory

Within the category of declarative or explicit knowledge, distinctions have been made between episodic and semantic knowledge (see Tulving, 1983). *Episodic memory* is the knowledge of specific time-dated events one has experienced. *Semantic memory* is knowledge that is not time dated, such as knowledge of the English vocabulary. Nelson (1993) suggests a further distinction between *generic event memory*, *episodic memory*, and *autobiographi-*



*cal memory.* Generic event memory does not include a precise time and place, but instead is memory for a familiar event such as driving to work; episodic memory includes information about time and place, whereas autobiographical memory is part of one's "life story." Nelson argued that autobiographical memory is unique in that it depends on a linguistic representation; because language encoding isn't available to very young children, *infantile amnesia* results.

### Types of Implicit Memory and Coding Theories

Different mental modules use different sorts of internal codes (Pavio, 1990). For instance, we may have codes for linguistic information that are quite different from our codes for visual motion information. Different sorts of procedural or implicit memory are likely to be themselves dissociated. For instance, memory for visual information is different from memory for auditory or emotional information. Although these types of memory will normally have *associative links* to allow integrated event perception, they are distinct neural entities. Numerous experimental results in cognitive psychology offer strong support for multiple mental codes and also for corresponding dissociations of the neural substrates. These distinctions in memory and mental coding may relate to the different operating characteristics of mental modules. A single real-world event can be perceived and represented by multiple mental mechanisms, and the information can be then represented in multiple codes. For instance, a person typically may encode declarative episodic information about the event (that is, the kind of information that one might be later able to verbalize). At the same time a person may be encoding sensory memories such as auditory, visual, and tactile memories, with each memory created in its own internal code by virtue of the processing units involved. Presumably in non-traumatic memories these different memory codes are associated in various ways through hippocampal processing (Squire, 1992).

### *Shareability of Mental Representations*

*Shareability* is a theory that I initially proposed (Freyd, 1983, 1993) to make sense of the discrepancy between mental processing that is highly analogical and continuous on the one hand, and mental processing that is apparently discrete and categorical on the other. My theory of shareability proposes, in essence, that through the process of information sharing we recode internal material to be discrete. Discrete information can have stability across space and time. Thus shared information may be qualitatively different from private information. Further, it is possible that the very purpose of consciousness is related to the social sharing of information: a mental coding format that allows information to be shared. Perhaps declarative episodic memory is the sharea-

ble trace laid down for future communications. This shareable trace may well allow a kind of communication within the individual mind, just as it does between different minds (Freyd, 1983), by providing a format that is accessible to, and interconnected with, multiple modules. If so, human consciousness may be simultaneously about integration of the self (James, 1890) and communication between individuals (see also Nelson, 1993). Interestingly, in a case study employing cognitive science measures of a patient with multiple personality disorder, Nissen, Ross, Willingham, MacKenzie, & Schachter, (1988, p. 131) found that "the degree of compartmentalization of knowledge in this patient appears to depend on the extent to which that knowledge is interpreted in ways that are unique to a personality as well as the extent to which processes operating at the time of retrieval are strongly personality-dependent."

*The Blurring of Perception and Memory—The Role of Time in Experience*

Browne (1990) argued that when we experience complex events, our experience extends beyond the temporal limits of the event itself. For instance, if on Friday your best friend announces her intention to move to Japan for 3 years, you might be processing that information rather steadily most of Saturday and Sunday, and only by Monday might you have integrated the information. Browne suggests that when traumatic events are repressed, the mind halts the usual processing that continues over time. Browne's (1990) suggestion is consistent with Nelson's (1993) proposal that autobiographical memory depends upon a time-consuming encoding process of recounting events in a representational format that is shareable with others. Browne's suggestion may also be consistent with the neuropsychological finding that the hippocampus has a specific time-dependent role in integrating explicit memories (Squire, 1992). Perhaps this time-consuming function of the hippocampus is inhibited after betrayal traumas, producing a sort of traumatic amnesia that leaves intact implicit memories for the event.

**Motivated Forgetting and Memory Inhibition**

Experimental psychologists have periodically been interested in motivated and adaptive forgetting. Freud, of course, argued that we forget most of our earliest memories due to the conflictual nature of the material (e.g., Freud, 1923). Waldfogel (1948) discovered that adults are more likely to forget unpleasant childhood memories than pleasant ones, and Henderson (1985) suggested that under certain conditions it is adaptive for animals to forget fearful events. Kihlstrom and Harackiewicz (1982, p. 146) noted, in a study they conducted on adults' early childhood memories, that "unpleasant and traumatic memories were especially susceptible to change, shifting toward the

neutral and/or trivial on the second trial—suggesting selectivity in the service of avoidance.” On a more mundane but essential issue, William James (1890) noted that “if we remembered everything, we should on most occasions be as ill off as if we remembered nothing” (p. 68). Bjork and Bjork (1988) and others have pointed out that without forgetting, our memory systems would be so full of clutter and outdated information as to be useless, but that at the same time, it is useful and adaptive to keep some sort of trace of old information such that under certain circumstances that information is readily retrieved again. This suggests that adaptive forgetting is a matter of inhibiting information as opposed to discarding it entirely. Bjork and his colleagues (e.g., Bjork, 1989; Bjork & Bjork, 1988, 1992; Geiselman, Bjork, & Fishman, 1983) have investigated the role of inhibitory processes in a cognitive psychology laboratory paradigm referred to as “directed forgetting.” In this paradigm, memory is impaired when subjects are instructed to forget material after they have learned it. In a related line of research, Anderson and his colleagues (Anderson & Bjork, 1994; Anderson, Bjork, & Bjork, 1994; Anderson & Spellman, in press) have recently demonstrated the existence of mechanisms that cause direct inhibition of previously well-encoded material. These laboratory effects of forgetting show that even well-encoded materials may be forgotten under controlled conditions. The mechanisms of forgetting in these cases may be related to some kinds of amnesias, such as posthypnotic amnesia (see Geiselman et al., 1983; Kihlstrom, 1983) or naturally occurring *fugues* in which a person suddenly forgets his own history, often following a traumatic event (see Hilgard, 1986; Terr, 1994).

#### WHY AND HOW TRAUMATIC AMNESIA OCCURS

The concepts I have reviewed can be combined in such a way as to account for traumatic amnesias and dissociations in response to child abuse. The theory will be presented in six propositions:

1. First, psychic pain, like physical pain, is an evolved, adaptive motivator for changing behavior. Further, the psychic pain involved in detecting betrayal, as in detecting a cheater, is an evolved, adaptive motivator for changing social alliances. In general, it is not to our survival or reproductive advantage to go back to those who have betrayed us for further interaction.
2. However, if the person who has betrayed us is someone we need to continue interacting with despite the betrayal, then it is *not* to our advantage to respond to the betrayal in the normal way. If we process the betrayal in the normal way, we will be motivated to stop interacting with the betrayer. Instead, we essentially need to ignore the betrayal. It is especially crucial that a betrayed child does not stop behaving in such a way that will inspire attach-

ment by parents or caregivers. It would be dangerous for a child to withdraw from a caregiver he or she is dependent on, even if that caregiver has betrayed the child. The child's withdrawal would risk causing a reduction of attachment by the caregiver which, in turn, would further threaten the child's life, both physically and mentally. The trauma of child abuse thus requires that information about the abuse be blocked from mental mechanisms that control attachment and attachment behavior. One does not need to posit any particular avoidance of psychic pain *per se* here; instead, what is of functional significance is the control of social behavior. Presumably an abusing caregiver can increase the probability of this adaptive reaction by communicating to the child that silence is necessary in order to maintain the relationship (see Lister, 1982).

3. The cognitive mechanisms that underlie this blockage of information are modular dissociations between normally connected, or integrated, aspects of processing and memory. These cognitive dissociations lead to the more global phenomenology and symptomology of clinical dissociation. Most traumatic amnesia can be understood in terms of low-level failures of integration that lead to reports of "memory repression." Multiple modules process events in parallel. For dissociation to occur it is *not* necessary for the traumatic information to be entirely blocked from entering the nervous system. Instead the information needs to be blocked from entering mechanisms that control attachment behavior. In some cases this may be achieved by dissociating affective information from declarative or episodic knowledge. However, because our control of social interactions often involves consciousness, it is often adaptive for the information to be blocked from consciousness as well. This blockage may depend on mechanisms of selective attention, in which information can be blocked from consciousness despite some degree of unconscious processing. Consistent blockage of information about abuse could presumably lead to profound amnesia.

4. However, in no way does this suggest that the information will *not* be processed by other less conscious mechanisms. For instance, sensory stores may well be laid for traumatic events, but without connectivity to declarative stores. More tragic, the information may be processed for learning certain adaptive strategies, and later in life this learning may lead to highly maladaptive behaviors. For instance, if there are mechanisms that exist in early childhood for learning parenting skills, as the primate and human data suggest (Seay, Alexander, & Harlow, 1964), these mechanisms may operate at full potential during abusive events, despite the blockage of information into more immediate control of social behavior and representation. In addition, the results of state- and mood-dependent learning experiments (Bower, 1987) suggest that affective and sensory memories for abuse will be more accessible in mental states resembling the states evoked during abusive events.

5. Another way the dissociation and amnesia may occur is in blocking, not

the initial entry of information into modules, but the repeated processing of that information through feedback loops of various kinds. To the extent that episodic memory for complex events depends on cognitive computations that take place over time, this sort of blockage could be very effective in producing amnesia for conscious episodic memories coupled with intact sensory and affective memories (Browne, 1990; Nelson, 1993; Squire, 1992). One could hypothesize that this lack of integration could also lead to the storage of essentially unprocessed information, so that when memories are later "recovered" they are initially experienced as immediate events or "flashbacks" (Siegel, 1992), lacking episodic interpretation.

6. Finally, amnesia can logically result even if initial event processing is not disrupted. In this case, which would perhaps most closely resemble the classic concept of repression, the forgetting occurs after the event is fully encoded and a memory is successfully stored. This might be adaptive if an event only became identifiable as a betrayal some time after the occurrence. Fugues, posthypnotic amnesias, and traumatic amnesias that occur substantially after successful encoding may involve the same low-level cognitive mechanisms used in laboratory studies of directed forgetting and memory inhibition (e.g., Anderson & Spellman, in press; Bjork, 1989; Bjork & Bjork, 1988; Geiselman et al., 1983).

## IMPLICATIONS

### Sequelae of Child Sexual Abuse

Herman (1992) describes the sequelae of repeated traumas such as child abuse as *complex posttraumatic stress disorder*. She categorizes the symptomatology of complex posttraumatic stress disorder into alterations of affect regulation, alterations in consciousness, alterations in self-perception and the perception of others, and alterations in systems of meaning. Herman's account, like others in the literature (e.g., Terr, 1991), emphasizes changes in mental information processing ("alterations"), especially of memory and consciousness.

These symptoms of complex posttraumatic stress disorder can be understood in terms of betrayal trauma. Sensory and emotional memories of a traumatic event can be created, but in such a way that the information is blocked from other more conscious and declarative, episodic memory stores, resulting in memory disturbances. Additionally, with dissociations between different memory stores for the same event, and even the blockage of information about current reality to some processing units, there will not be the firm foundation laid in assessing reality using all available internal sources of knowledge (see Herman, 1992; Kluft, 1990; van der Kolk, 1987). Betrayal trauma is also consistent with difficulties with trust, either in the form of too

great a willingness to trust or no ability to trust, also a common result of child abuse (Brown & Finkelhor, 1986). This follows from the prolonged blockage of information into mechanisms that accurately assess cheating and betrayal. With sensory and affective memories missing episodic interpretation, we would expect to see mood states, hallucinations, flashbacks, nightmares, and bodily sensations that are easily interpreted as physical illness or somatization (van der Kolk, 1987). Betrayal trauma predicts specific learned behaviors. For instance, a child who has been repeatedly beaten may learn to flinch, to manipulate the timing of another person's aggressive tendencies, or to engage in other behavior of value during abuse. Without conscious interpretation of these learned abilities, the trauma survivor has no way of knowing the source of his or her behavior. Sadly, this may be especially true for behaviors learned during infancy and childhood and later expressed during parenting (Seay et al., 1964).

#### Memory "Recovery" and the Efficacy of Psychotherapy

Psychotherapy has the potential to heal trauma wounds for a variety of reasons. First, as many researchers have pointed out, the therapeutic relationship may be corrective for the client. In therapy the client has the opportunity to learn to build appropriate trust and set social boundaries in a healthy way. This can be understood in terms of using the social information-processing mechanisms in a fully integrated manner. Second, the therapist can help the client with interpretations of the sensory memories, feelings, and behaviors. This can allow the client to make sense of negative feelings and maladaptive behaviors, and thus to exert more control over those feelings and behaviors, a development that almost certainly will improve self-esteem. This aspect of psychotherapy and memory recovery also has the potential to lead to distortions in the interpretation of sensory, affective, and behavioral memories.

Third, and of most interest to me, is the possibility that by *talking* about the traumatic memories, the client spontaneously creates an episodic interpretation and integration of previously disjointed sensory and affective memories (see also Herman, 1992; Nelson, 1993; Pennebaker, 1990; Squire, 1992). The healing role of communication in psychotherapy may partially relate to the recoding of sensory and affective information in "shareable" ways, just as the original traumatic amnesia may relate to the blockage of such recoding. More specifically, sensory information stored in a continuous way may be rendered more discrete and categorical due to shareability, and in turn the information may be then more accessible to other cognitive modules that serve to integrate and control mental activity (Freyd, 1983, 1993).

### Research Directions

Betrayal trauma differs from the prevailing conception of traumatic adaptation in its emphasis on the social utility of forgetting abuse by caregivers, as opposed to the more standard emphases on trauma as overwhelming or unbearably painful. Some events may be traumatic due to the terror or pain they induce and yet relatively devoid of betrayal (such as a natural disaster in which the victims cooperate to survive). Betrayal trauma suggests that profound amnesia is not a likely response to these sorts of events, although other aspects of posttraumatic stress, such as increased arousal, generalized numbing, and intrusive cognitions (Horowitz, 1986) would be expected. This suggests a testable prediction of betrayal trauma: that the degree of amnesia will be a function of the degree of betrayal (with *betrayal* being defined as a conflict between reality and the need to maintain trust in caregivers). However, one must take into account that individuals previously traumatized by child abuse may employ previously learned defensive mechanisms to new traumas, including dissociative responses that lead to profound amnesias.

My colleagues and I are investigating the relationship between betrayal traumas and dissociative sequelae in a clinical population. This research direction requires defining and measuring betrayal traumas as a distinct class of trauma, and then measuring specific dissociative and amnesic symptoms as a function of those betrayal traumas (see Bernstein & Putnam, 1986). One possible outcome of this project is arriving at a better understanding of psychological damage due to the psychological components of abuse. As Spiegel (1989, p. 295) commented, "Rape is a violation of both body and mind, transforming sensations associated with pleasure into pain, damaging a victim's sense of independence, personal safety, and capacity for future intimate relationships." Similar consequences likely occur for many other forms of abuse. I suspect that extensive damage can occur even when no physical or sexual contact occurs between a perpetrator and victim—that indeed psychological torment due to emotionally sadistic and invasive treatment or gross emotional neglect may prove to be as powerfully destructive as other forms of abuse. A related possibility is that recovered memories for contact abuse may sometimes be metaphorical for emotional abuse (see Ganaway, 1989). However, such memory distortions would not be accurately characterized as simply false. Until we have a definition of *abuse* that adequately reflects psychological torment, we may well be indirectly encouraging memory distortions as a way for people to communicate their psychic pain.

Research is needed to evaluate the influence of factors that are predicted to produce amnesia for abuse (see Putnam, 1993, for discussion of the multiple protective functions of dissociative responses). Betrayal trauma would predict that we would find the greatest probability of information blockage for be-

trayal by a close caregiver (e.g., sexual abuse by a parent who is otherwise providing nurturing). Preliminary results from a study of women in therapy to deal with their childhood sexual abuse provide some support for this hypothesis. Cameron (1993) found that reported amnesia was significantly and strikingly more likely (75% versus 24%) when victims had been abused by their fathers versus never abused by their fathers. Eventually it will be important to evaluate experiences of betrayal with detailed analyses of the degree of dependency in the relationship: Do victims of child abuse by a nonparent who then forget the abuse—for example, Frank Fitzpatrick and the others who repressed abuse by convicted child molester Father Porter (*Commonwealth of Massachusetts v. Porter*, 1993; Goleman, 1992)—show evidence of more dependency in the relationship than those victims who remember the abuse—for example, the majority of Father Porter's victims (*Commonwealth of Massachusetts v. Porter*, 1993; Goleman, 1992)? Similarly, is betrayal by a person (or group) with significant power over the victim (such that the victim feels dependent) a factor in amnesias for traumas experienced by adults (such as the battering of wives)? Even some military traumas include a significant component of perceived betrayal by those in authority (see Bartone & Wright, 1990; Brende, 1987; Glover, 1988); are such traumas more likely to lead to amnesia than other comparable military traumas lacking in perceived betrayal?

Factors related to betrayal by a close caregiver probably contribute to the social utility of forgetting childhood abuse. For instance, explicit threats and demands for silence from the abuser (statements such as "if you tell I'll kill you" or "I'll kill your mother") would hypothetically increase the survival advantages of forgetting the betrayal in order to maintain critical attachment bonds and would thus increase the probability of amnesia (also see Lister, 1982). Other factors are predicted to contribute to the cognitive feasibility of blocking information about the abuse: alternative realities available (abuse in middle of night and "normal" family interactions in day, allowing for a small set of consistent constructions of reality); isolation during abuse (lack of social validation for the experience, allowing for cognitively consistent internal denial); young age at onset of abuse (reality defined by adults, lack of integrative functions, plasticity of nervous system); alternative reality-defining statements by caregivers ("this didn't happen"); and/or the absence of any socially shared explicit discussion of the abusive events, causing a failure of information entry into the child's explicit autobiographical memory (Nelson, 1993). These factors that are predicted to contribute to the social utility and/or the cognitive feasibility of forgetting abuse should be compared for their tendency to induce amnesia with the influence of the classically considered components of trauma, such as stress, overwhelming terror, and intense psychological pain. Terr (1991, 1994) has suggested that repeated traumas are more likely to lead to amnesia than are single traumas. This may be true because traumas that get repeated are likely to be abuses and betrayals highly loaded on the factors



listed above, not because the repeating of trauma *per se* induces amnesia. One could investigate this hypothesis by disentangling the factors of repetition and betrayal—examining nonrepeated versus repeated betrayal traumas and non-repeated versus repeated nonbetrayal traumas.

Another direction for research that we have initiated in my laboratory at the University of Oregon involves exploring the basic cognitive mechanisms underlying dissociative experiences. Using a college student population, we are measuring performance on cognitive tasks employing selective attention, explicit memory, and implicit memory, and relating those performance differences to differences in dissociative experiences. This project has the potential of relating basic attentional and representational processes to dissociative experiences and disorders. A logical extension of this research direction, based on a strategy that has been very effective in cognitive neuroscience, would be to look for neuroanatomical underpinnings of the cognitive mechanisms implicated in dissociation. In future studies we will test more specific hypotheses about the cognitive changes involved in dissociation. For instance, the ability to dissociate current experience may depend partly on representational structures that support spontaneous perceptual transformations of incoming events. One possible perceptual transformation that is amenable to scientific investigation would be the creation of spatial representations in which the mental “observer” is spatially distinct from the real body of that observer. Such a representation would fit patients’ descriptions of “leaving their body” during a traumatic episode and viewing the scene as if from afar. Additionally one could investigate the role of mental recoding and restructuring during memory “recovery” and psychotherapy. I would be particularly interested in revealing transformations in knowledge structure predicted by shareability (Freyd, 1983, 1993), such as an increase in categorical representations of previously analogical sensory information.

#### The Delayed Memory Debate—Concluding Remarks

How might betrayal trauma theory contribute to the current debate about the veracity of delayed memories for childhood sexual abuse? Some have argued that psychogenic amnesia for childhood sexual abuse is impossible or unlikely, and that in contrast, false memories of abuse are both possible and likely (e.g., see Loftus, 1993; Ofshe & Watters, 1993). Indeed, many people now believe that a typical case of a contested memory of sexual abuse is more likely to be a case of false memory than a case of sexual abuse. Betrayal trauma theory does not directly address the issue of whether false memories for sexual abuse are possible. Nor does it answer the more important related question: Assuming that some memories are largely false and some memories are essentially true, how frequently does the truth essentially prevail, and under what circumstances might inaccuracy dominate? What is the likelihood that an adult raised

in a nonabusive family might come to believe, falsely, that he or she was abused? These are important questions deserving additional evidence and conceptualization from both experimental psychology and clinical observation. However, even with progress in this endeavor, individual cases of contested memories will continue to deserve open-minded individual scrutiny; individual truths cannot be logically known by group trends.

Betrayal trauma theory does address the issue of the plausibility of amnesia for actual childhood sexual abuse. It is proposed here that there is a logic to amnesia for childhood abuse. Under certain conditions, such as abuse by a close caregiver, amnesia about the abuse is an adaptive response, for amnesia may allow a dependent child to remain attached to—and thus elicit at least some degree of life-sustaining nurturing and protection from—his or her abusive caregiver. Furthermore, various degrees of amnesia (from partial to robust) with various onsets (from at the time of the event to afterwards) and various consequences can be understood in terms of what cognitive science currently informs us about memory and attention. Thus we can reject at least one of the claims made by some critics of the legitimacy of delayed memories—namely, that memory “repression” for sexual abuse is impossible or implausible. In addition to the existing documentation of amnesia and memory recovery for verified traumas (e.g., *Commonwealth of Massachusetts v. Porter*, 1993; Terr, 1994; van der Kolk, 1987; Williams, 1992), this analysis may serve to validate the forgetting and remembering experiences of survivors of childhood sexual abuse and other traumas. Ultimately, however, a great deal of additional empirical and conceptual research is needed so that we can understand the nature of memories for childhood abuse. Only with that understanding will we be able to make much progress in evaluating contested memories. More important, only with additional knowledge and understanding of how people naturally respond to actual childhood abuse will we be able to halt the epidemic of abuse that plagues our society.

#### ACKNOWLEDGMENTS

An expanded version of this article will appear in *Betrayal Trauma* by Jennifer J. Freyd, Harvard University Press (in preparation). Earlier versions were given at the Second Annual Conference on a Psychodynamics–Cognitive Science Interface, University of California, San Francisco, August 21–22, 1991, at the 39th Annual Meeting of the American Academy of Child & Adolescent Psychiatry, Washington, DC, October 20–25, 1992, and at the Center for Mental Health at Foote Hospital’s Continuing Education Conference: Controversies Around Recovered Memories of Incest and Ritualistic Abuse, in Ann Arbor, Michigan, August 7, 1993.

I am grateful for support received from the National Institute of Mental Health (R01-MH39784 and K02-MH00780).

I am indebted to many colleagues, including Bernard Baars, Bill Banks, Pamela Birrell, Leda Cosmides, Kathy Pezdek, and Mick Rothbart, for their insights, suggestions, and criticisms. I am especially grateful for the comments on earlier drafts of this article provided by Jill Christman.

## REFERENCES

- Anderson, M. C., & Bjork, R. A. (1994). Mechanisms of inhibition in long-term memory: A new taxonomy. In D. Dagenbach & T. Carr (Eds.), *Inhibitory processes in attention, memory and language* (pp. 265–325). San Diego: Academic Press.
- Anderson, M. C., Bjork, R. A., & Bjork, E. L. (1994). Remembering can cause forgetting: Retrieval dynamics in long-term memory. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 20, 1063–1087.
- Anderson, M. C., & Spellman, B. A. (in press). On the status of inhibitory mechanisms in cognition: Memory retrieval as a model case. *Psychological Review*.
- Archibald, H. C., & Tuddenham, R. D. (1965). Persistent stress reaction after combat: A 20 year follow-up. *Archives of General Psychiatry*, 12, 475–481.
- Barach, P. M. M. (1991). Multiple personality disorder as an attachment disorder. *Dissociation*, 4, 117–123.
- Bartone, P. T., & Wright, K. M. (1990). Grief and group recovery following a military air disaster. *Journal of Traumatic Stress*, 3, 523–539.
- Bernstein, E., & Putnam, F. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease*, 174, 727–735.
- Bjork, E. L., & Bjork, R. A. (1988). On the adaptive aspects of retrieval failure in autobiographical memory. In M. M. Gruneberg, P. E. Morris, & R. N. Sykes (Eds.), *Practical aspects of memory: Current research and issues: Vol. 1. Memory in everyday life* (pp. 283–288). London: Wiley.
- Bjork, R. (1989). Retrieval inhibition as an adaptive mechanism in human memory. In H. L. Roediger & F. I. M. Craik (Eds.), *Varieties of memory and consciousness: Essays in honor of Endel Tulving* (pp. 309–330). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Bjork, R. A., & Bjork, E. L. (1992). A new theory of disuse and an old theory of stimulus fluctuation. In A. Healy, S. Kosslyn, & R. Shiffrin (Eds.), *From learning processes to cognitive processes: Essays in honor of William K. Estes* (Vol. 2, pp. 35–67). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Boodman, S. G. (1994, April 12). Advocacy group for “aggrieved” parents fights back. *Washington Post*, p. 15.
- Bower, G. (1987). Commentary on mood and memory. *Behavioral Research Theory*, 25, 443–455.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.
- Braun, B. G. (1990). Dissociative disorders as sequelae to incest. In R. P. Kluft (Ed.), *Incest-related syndromes of adult psychopathology* (pp. 227–245). Washington, DC: American Psychiatric Press.
- Brende, J. O. (1987). Dissociative disorders in Vietnam combat veterans. *Journal of Contemporary Psychotherapy*, 17, 77–86.

- Briere, J. (1992). Studying delayed memories of childhood sexual abuse. *The Advisor (American Professional Society on the Abuse of Children)*, 5, 17–18.
- Browne, A., & Finkelhor (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin*, 99(1), 66–77.
- Browne, I. (1990). Psychological trauma, or unexperienced experience. *ReVision*, 12, 21–34.
- Bryer, J., Nelson, B., Miller, J., & Krol, P. (1987). Childhood sexual and physical abuse as factors in adult psychiatric illness. *American Journal of Psychiatry*, 144, 1426–1430.
- Bunge, N. (1993). Child abuse and creativity: A new look at Sherwood Anderson's breakdown. *Journal of Psychohistory*, 20, 413–426.
- Cameron, C. (1993, April). *Recovering memories of childhood sexual abuse: A longitudinal report*. Paper presented at the Western Psychological Association Convention, Phoenix, AZ.
- Chu, J., & Dill, D. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry*, 147, 887–892.
- Commonwealth of Massachusetts v. Porter. 31285–330 (Massachusetts, 1993).
- Cosmides, L. (1989). The logic of social exchange: Has natural selection shaped how humans reason? Studies with the Wason selection task. *Cognition*, 31, 187–276.
- Dominelli, L. (1989). Betrayal of trust: A feminist analysis of power relationships in incest abuse and its relevance for social work practice. *British Journal of Social Work*, 19, 291–307.
- Erdelyi, M. H. (1990). Repression, reconstruction, and defense: History and integration of the psychoanalytic and experimental frameworks. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality theory, psychopathology, and health* (pp. 1–32). Chicago: University of Chicago.
- Feinauer, L. L. (1989). Comparison of long-term effects of child abuse by type of abuse and by relationship of the offender to the victim. *American Journal of Family Therapy*, 17, 48–56.
- Feldman-Summers, S., & Pope, K. S. (1994). The experience of “forgetting” childhood abuse: A national survey of psychologists. *Journal of Consulting and Clinical Psychology*, 62(3), 636–639.
- Femina, D. D., Yeager, C. A., & Lewis, D. O. (1990). Child abuse: Adolescent records vs. adult recall. *Child Abuse and Neglect*, 14, 227–231.
- Finkelhor, D. (Ed.). (1986). *A sourcebook on child sexual abuse*. Beverly Hills: Sage.
- Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry*, 55, 530–541.
- Fodor, J. A. (1983). *The modularity of mind*. Cambridge, MA: MIT Press.
- Freud, S. (1923). *Introductory lectures on psycho-analysis* (J. Riviera, Trans.). London: Allen & Unwin.
- Freyd, J. J. (1983). Shareability: The social psychology of epistemology. *Cognitive Science*, 7, 191–210.
- Freyd, J. J. (1993). Five hunches about perceptual processes and dynamic representations. In D. Meyer & S. Kornblum (Eds.), *Attention & performance XIV: Synergies in experimental psychology, artificial intelligence, and cognitive neuroscience—A silver jubilee* (pp. 99–119). Cambridge, MA: MIT Press.
- Freyd, J. J. (in preparation). *Betrayal trauma*. Cambridge, MA: Harvard University Press.
- Ganaway, G. (1989). Historical truth versus narrative truth: Clarifying the role of exogenous trauma in the etiology of multiple personality disorder and its variants. *Dissociation*, 2, 205–220.
- Geiselman, R. E., Bjork, R. A., & Fishman, D. (1983). Disrupted retrieval in directed forgetting: A link with posthypnotic amnesia. *Journal of Experimental Psychology: General*, 112, 58–72.
- Glover, H. (1988). Four syndromes of post-traumatic stress disorder: Stressors and conflicts of the traumatized with special focus on the Vietnam combat veteran. *Journal of Traumatic Stress*, 1, 57–78.

- Goleman, D. (1992, July 21). Childhood trauma: Memory or invention? *New York Times*, pp. B5-B8.
- Goodwin, J., Attias, R., McCarty, T., Chandler, S., & Romanik, R. (1988). Reporting by adult psychiatric patients of childhood sexual abuse. *American Journal of Psychiatry*, 146, 1183.
- Grant, L. (1994, April 25). Tricks of memory: A new group concerned about child sex abuse is taking up the fight against the doctrine of false memory syndrome. *Guardian*, pp. T008-T009.
- Henderson, R. W. (1985). Fearful memories: The motivational significance of forgetting. In F. R. Brush & J. B. Overmier (Eds.), *Affect, conditioning, and cognition: Essays on the determinants of behavior* (pp. 43-53). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Henderson, J. L., & Moore, M. (1944). The psychoneuroses of war. *New England Journal of Medicine*, 230, 273-279.
- Herman, J. L. (1992). *Trauma and recovery*. Basic Books.
- Herman, J. L., & Schatzow, E. (1987). Recovery and verification of memories of childhood sexual trauma. *Psychoanalytic Psychology*, 4(1), 1-14.
- Hilgard, E. R. (1986). *Divided consciousness: Multiple controls in human thought and action* (expanded ed.). New York: Wiley.
- Hinton, G. E., & Anderson, J. A. (Eds.). (1981). *Parallel models of associative memory*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Horowitz, M. J. (1986). *Stress response syndromes* (2nd ed.). Northvale, NJ: Aronson.
- Jacoby, L. L., & Kelley, C. M. (1992). A process-dissociation framework for investigating unconscious influences: Freudian slips, projective tests, subliminal perception, and signal detection theory. *Current Directions in Psychological Science*, 1, 174-179.
- James, W. (1890). *Principles of psychology*. New York: Holt.
- Kelly, D. D. (Ed.). (1986). *Stress-induced analgesia*. New York: New York Academy of Sciences.
- Kihlstrom, J. F. (1983). Instructed forgetting: Hypnotic and nonhypnotic. *Journal of Experimental Psychology: General*, 112, 73-79.
- Kihlstrom, J. F., & Harackiewicz, J. M. (1982). The earliest recollection: A new survey. *Journal of Personality*, 50, 134-148.
- Kinsey, A. (1953). *Sexual behavior in the human female*. Philadelphia: Saunders.
- Kluft, R. P. (Ed.). (1990). *Incest-related syndromes of adult psychopathology*. Washington, DC: American Psychiatric Press.
- Krystal, J. H. (1990). Animal models for posttraumatic stress disorder. In E. L. Giller (Ed.), *Biological assessment and treatment of posttraumatic stress disorder* (pp. 1-26). Washington, DC: American Psychiatric Press.
- Levinthal, C. F. (1988). *Messengers of paradise: Opiates and the brain*. New York: Anchor.
- Lister, E. D. (1982). Forced silence: A neglected dimension of trauma. *American Journal of Psychiatry*, 139(7), 872-876.
- Loftus, E. F. (1993). The reality of repressed memories. *American Psychologist*, 48, 518-537.
- Loftus, E. F., Polonsky, S., & Fullilove, M. T. (1994). Memories of childhood sexual abuse: Remembering and repressing. *Psychology of Women Quarterly*, 18, 67-84.
- McFall, M. E., Murburg, M. M., Smith, D. E., & Jensen, C. F. (1991). An analysis of criteria used by VA Clinicians to Diagnose Combat-Related PTSD. *Journal of Traumatic Stress*, 4, 123-136.
- McNally, R. J. (1992). Psychopathology of post-traumatic stress disorder (PTSD): Boundaries of the syndrome. In M. Basaglu (Ed.), *Torture and its consequences: Current treatment approaches* (pp. 229-252). Cambridge, UK: Cambridge University Press.
- Miller, A. (1984). *Thou shalt not be aware: Society's betrayal of the child*. New York: Farrar, Straus, Giroux.
- Nelson, K. (1993). The psychological and social origins of autobiographical memory. *Psychological Science*, 4, 7-14.
- Nissen, M. J., Ross, J. L., Willingham, D. B., MacKenzie, T. B., & Schacter, D. L. (1988).

- Memory and awareness in a patient with multiple personality disorder. *Brain and Cognition*, 8, 117–134.
- Ofshe, R., & Watters, E. (1993, March/April). Making monsters. *Society*, 4–16.
- Pavio, A. (1990). *Mental representations: A dual coding approach*. New York: Oxford University Press.
- Pennebaker, J. W. (1990). *Opening up: The healing power of confiding in others*. New York: Morrow.
- Peters, S. D., Wyatt, G. E., & Finkelhor, D. (1986). Prevalence. In D. Finkelhor (Ed.), *A sourcebook on child sexual abuse* (pp. 15–59). Beverly Hills: Sage.
- Putnam, F. W. (1989). *Diagnosis and treatment of multiple personality disorder*. New York: Guilford.
- Putnam, F. W. (1993). Dissociative disorders in children: Behavioral profiles and problems. *Child Abuse and Neglect*, 17, 39–45.
- Putnam, F. W., Guroff, J. J., Silberman, E. K., Barban, L., & Post, R. M. (1986). The clinical phenomenology of multiple personality disorder: A review of 100 recent cases. *Journal of Clinical Psychiatry*, 47, 285–293.
- Rumelhart, D. E., McClelland, J. L., & the PDP Group. (1986). *Parallel distributed processing: Explorations in the microstructure of cognition*. Cambridge, MA: MIT Press.
- Russell, D. E. H. (1986). *The secret trauma: Incest in the lives of girls and women*. New York: Basic Books.
- Salter, S. (1993, April 10). Debating the way memory works. *San Francisco Examiner*, pp. A-1, A-18.
- Schacter, D. L. (1992). Understanding implicit memory. *American Psychologist*, 47, 559–569.
- Seay, B., Alexander, B. K., & Harlow, H. F. (1964). Maternal behavior of socially deprived rhesus monkeys. *Journal of Abnormal and Social Psychology*, 69, 345–354.
- Siegel, D. (1992, April 13). Memory and trauma. First lecture in the Lecture Series in Cognitive Science and Mental Health, Institute of Cognitive and Decision Sciences, University of Oregon, Eugene.
- Spiegel, D. (1989). Hypnosis in the treatment of victims of sexual abuse. *Psychiatric Clinics of North America*, 12, 295–305.
- Squire, L. R. (1992). Memory and the hippocampus: A synthesis from findings with rats, monkeys, and humans. *Psychological Review*, 99, 195–213.
- Strick, F. L., & Wilcoxon, S. A. (1991). A comparison of dissociative experiences in adult female outpatients with and without histories of early incestuous abuse. *Dissociation*, 4, 193–199.
- Summit, R. C. (1988). Hidden victims, hidden pain: Societal avoidance of child sexual abuse. In G. E. Wyatt & G. J. Powell (Eds.), *Lasting effects of child sexual abuse* (pp. 39–60). Newbury Park, CA: Sage.
- Terr, L. (1987). What happens to early memories of trauma? A study of twenty children under age five at the time of documented traumatic events. *Journal of American Academy of Child and Adolescent Psychiatry*, 27, 96–104.
- Terr, L. (1990). *Too scared to cry: Psychic trauma in childhood*. New York: Harper & Row.
- Terr, L. (1991). Childhood traumas: An outline and overview. *American Journal of Psychiatry*, 148(1), 10–20.
- Terr, L. (1994). *Unchained memories: True stories of traumatic memories, lost and found*. New York: Basic Books.
- Treisman, A. M. (1960). Verbal cues, language, and meaning in selective attention. *Quarterly Journal of Experimental Psychology*, 12, 242–248.
- Tulving, E. (1983). *Elements of episodic knowledge*. New York: Oxford University Press.
- van der Hart, O., & Friedman, B. (1989). A reader's guide to Pierre Janet on dissociation: A neglected intellectual heritage. *Dissociation*, 2, 3–16.
- van der Kolk, B. A. (1987). *Psychological trauma*. Washington, DC: American Psychiatric Press.

- van der Kolk, B. A., & van der Hart, O. (1989). Pierre Janet and the breakdown of adaptation in psychological trauma. *American Journal of Psychiatry*, 146, 1530–1539.
- Waldfoegel, S. (1948). The frequency and affective character of childhood memories. *Psychological Monographs*, 62(4).
- Williams, L. M. (1992). Adult memories of childhood abuse: Preliminary findings from a longitudinal study. *The Advisor (American Professional Society on the Abuse of Children)*, 5, 19–21.

